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ABSTRACT

This booklet contains 28 fact sheets on communication written primarily for parents and families with a child who is deaf-blind. They attempt to address fundamental but complex issues related to the communication needs of children with vision and hearing impairments. Each fact sheet targets a specific area, including: (1) communication; (2) communication development; (3) receptive and expressive communication; (4) five critical features of receptive and expressive communication (forms, functions, content, partners, and physical environment); (5) forms of communication; (6) functions of communication; (7) individualized communication; (8) general strategies for teaching communication (using social interaction, teaching cognitive skills, using routines and functional activities, recognizing and using receptive communication, individualizing teaching, increasing the rate of communication, and manipulating the environment); (9) using routines and functional activities to enhance communication; (10) addressing challenging behavior; (11) intentional behavior; (12) receptive contextual cues; (13) receptive touch cues; (14) receptive object cues; (15) receptive gestures; (16) use of touch as expressive communication; (17) expressive gestures; (18) pictures; (19) language; (20) speech; (21) Braille; (22) sign language; (23) printed material; (24) assistive technology; (25) assistive auditory technology; (26) assistive visual technology; (27) assistive tactual technology; and (28) culture and communication. (Contains 15 references.) (CR)

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Communication Fact Sheets for Parents

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NTAC

The National Technical Assistance Consortuim for Children and Young Adults Who Are Deaf-Blind

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The parent tips found on each fact sheet were taken from the NTAC publication *Communication at Home and in the Community: Helpful Strategies and Suggestions from Parents and Families with a Child Who Is Deaf-Blind*. This booklet contains strategies and suggestions drawn from over a hundred parents and family members. Additional thanks to the many parents who contributed to this booklet.

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Office of Special Education Programs

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Foreword

It is important to point out that the purpose of these FACT SHEETS is to provide information to parents and service providers so that they can better understand the communication and language modes and systems that may be appropriate for many children and youth who are deaf-blind. The information in this document is not meant to serve as an assessment sequence to be "tried out" on an individual child. Each child should have access to individualized formal and informal assessments that are completed by both parents and professionals. A "team" of service providers, peers/siblings, and parents is responsible for using appropriate assessment data to plan, implement, and evaluate each child's/youth's communication goals and activities as they are developed according to the IFSP/IEP. These FACT SHEETS are simply intended to increase everyone's knowledge base so that better decisions can be made that take into account each child's/youth's vision, hearing, tactual skills, cognition, social skills, motor skills, and medical conditions.

Introduction

In January 1998, the National Technical Assistance Consortium for Children and Young Adults Who Are Deaf-Blind (NTAC) surveyed over 500 families with a child who is deaf-blind. Results from this survey clearly indicated that communication was a critical issue. In response, NTAC and the National Family Association for Deaf-Blind (NFADB) cosponsored two national parent workshops in 1998 and 1999 with the theme of communication. Feedback from participants during these two workshops led NTAC to produce a series of communication fact sheets written primarily for parents and families with a child who is deaf-blind.

Within this booklet you will find 28 fact sheets, each covering a particular aspect of communication. They attempt to address fundamental but complex issues related to the communication needs of children with vision and hearing impairments. Each fact sheet targets a specific question. For example, How does communication develop? What is receptive and expressive communication? What are touch cues? What are object cues?

As you review the table of contents, you may look for those questions for which you are most interested in obtaining answers. But please be mindful that while fact sheets can be read and used separately, they will be a more effective learning tool when read collectively.

It is the hope of the contributing writers that these fact sheets will offer useful and easy-to-apply information to families, as well as to service providers, as they work to facilitate communication for the child who is deaf-blind.

Fact Sheet #1

Communication

Parent Tip

Use a communication system that is sensitive to your family's needs.

What is it?

Communication is a social act or behavior that occurs between at least two people. We communicate in many different ways for many different reasons. In order for communication to occur, one person must send a "message" and the other person must receive the message. The person who purposefully expresses a behavior toward another person is using expressive communication. However, for communication to occur between two people, there must be an intent or purpose on the part of one person to impact the other.

Communication is made up of a number of important features: these include form, function, content, the presence of a communication partner, and the physical environment.

Why is it important?

Communication is an essential human behavior. We use communication to play, to learn, to teach, and to interact with other human beings. We use it to form friendships and to be part of a community. Through communication we can learn more about each other and more about the world that we live in. Without communication we become isolated from our fellow human beings and cannot form meaningful relationships (Miles & Riggio, 1999).

All children learn to communicate before they learn words, signs, or how to use pictures. Children learn to understand that the communication of others has a purpose and meaning. They begin to understand the messages from other people before they use communication expressively. Therefore, receptive communication is important for learning expressive communication. Children must also have a reason to communicate before they can communicate expressively.

Important points to remember:

- Communication is critical for social interaction and friendships.
- Expressive communication builds upon receptive communication (communicating with the child provides a model).
- The lack of a communication system can further isolate a child who is deaf-blind.
- In order to have communication, a child needs a way to communicate, a reason to communicate, and something to communicate about.

NOTES

Fact Sheet #2

Communication Development

What is it?

Communication develops within social interactions. Typical infants first respond to a parent's smile, to physical closeness, and to the quality and intonation of a parent's voice. They make eye contact with other people and learn to smile in response to someone's smile. They begin to vocalize in response to parents' faces and voices.

Young infants learn to anticipate what will happen next based upon familiar routines. They see and hear certain cues that begin to have meaning. Young children initially learn to interpret the intent of a message. All children first learn to communicate with very basic forms such as crying, vocalizing, body movement, facial gestures, and touching. Children's communication development is progressive and gradual. They first learn to communicate in the "here and now."

Young children learn that their reason for communicating is to elicit a response from caregivers; therefore, to improve children's communication caregivers need to be responsive to early communication and encourage children's use of abstract forms of communication, such as the use of manual signs and speech words.

Children learn to communicate through turn-taking games, routines, and play. Communication development is a very active process, and the child must be an active learner by interacting with others and with the environment.

Children who see and/or hear are able to use the "far senses" of vision and hearing to learn communication. This is not the case with infants and children who are deaf and blind.

Why is it important?

Communication does not happen in the typical way for a child who is congenitally deaf-blind. The way in which the child's communication develops and the speed at which communication develops is highly dependent upon the onset of vision/hearing loss and upon the severity of the sensory loss. If the child cannot use vision and hearing to learn at a far distance, then interactions with caregivers and others must be adapted so that the child can learn at near proximity. The impact of both the hearing and vision loss on the child's communication can be tremendous. If the child has motor and/or cognitive disabilities, he or she may need even more time and more intense strategies to learn to communicate effectively.

Caregivers and others must share the same mode of communication with the child. They must learn to take turns. Caregiving routines and functional activities are very important to a child's learning. He or she will need more opportunities to communicate than a typical child.

Communication development can never happen too early. It can never be too late for a child or youth to learn to communicate. Remember, without the development of communication, children may demonstrate "learned helplessness," thinking that they cannot impact other human beings.

Parent Tip

Encourage every family member to take responsibility for including and communicating with your child.

Important points to remember:

- The child must be an active, not a passive learner.
- The child's tactual senses may be the primary sense to receive messages.
- The child and caregivers' social relationships and interactions are essential.
- The child will need time to learn how to communicate. The child will need many, many opportunities to communicate.
- The child must have multiple reasons to communicate.
- The child may use many different forms of communication.

Fact Sheet #3

Receptive and Expressive Communication

What are they?

Communication is the exchange of a message between at least two people. Receptive communication is the process of receiving and understanding a message from another person. It can be thought of as the input. Expressive communication is the message to another person. It is the means by which feelings, wants, likes/dislikes, comments, and intents to others are expressed. Expressive communication can be thought of as the output. For effective communication, both expressive and receptive communication must occur.

Why are they important?

As social beings, we must be able to receive and understand messages from others. We must also be able to send messages to inform others of our wants, needs, choices, feelings, and expressions. Expressive and receptive communication allow for people to be connected. They are both needed to complete the communication cycle (see Figures 1 and 2).

Parent Tip

Demonstrate pride in communicating with your child. Be visible in doing this, and your enthusiasm will rub off on others.

When we engage in turn-taking activities with a child, we show them how to use both expressive and receptive communication. As we exchange roles with the child as the expresser and the receiver, the child has the opportunity to have a conversation, not merely to respond to a command or directive.

It is important to identify and take advantage of communication opportunities that will allow for the development of both expressive and receptive communication. When a child has learned these, he or she will be able to develop and expand relationships, express needs and wants, and learn about routines, including the beginning and ending of an activity (Siegel-Causey & Guess, 1989).

When communicating with a deaf-blind child, there may be one form of communication for expression and a different one for reception. Choosing a form to use will depend on the child's social, physical, perceptual, and cognitive skills.

Typical children and children with disabilities usually understand different forms of receptive communication before they are able to use these forms for expression. Some typical children may need to hear a word 1,000 times before they are able to use it correctly. Children with deaf-blindness will need to hear, see, or feel gestures, objects, signs, or words many times before they will be able to use them receptively or expressively.

Some receptive communication forms are:

- Object cues and touch cues
- Pictures
- Photos
- Gestures
- Tangible representations
- Sign language
- Written words
- Speech/vocalizations

Some expressive communication forms are:

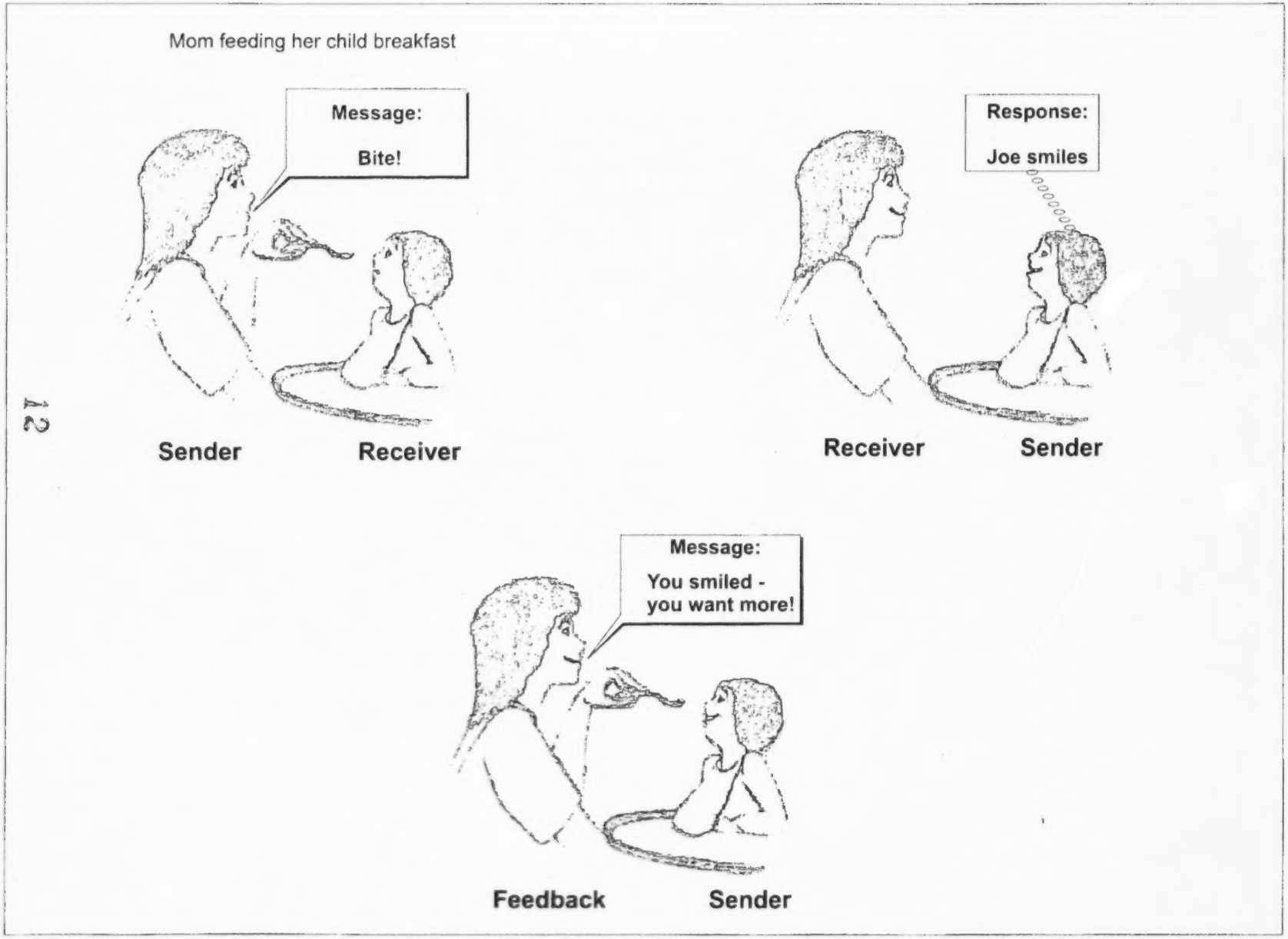
- Body movements
- Touching objects and/or persons
- Challenging behavior
- Gestures

- Vocalizations
- Tangible symbols/pictures/photographs
- Speech
- Written word
- Sign language
- Augmentative modes - aid or techniques that supplement speech
- Alternative communication style - a communication method used by a person without any vocal ability (Vanderheiden & Yoder, 1986)

Important points to remember:

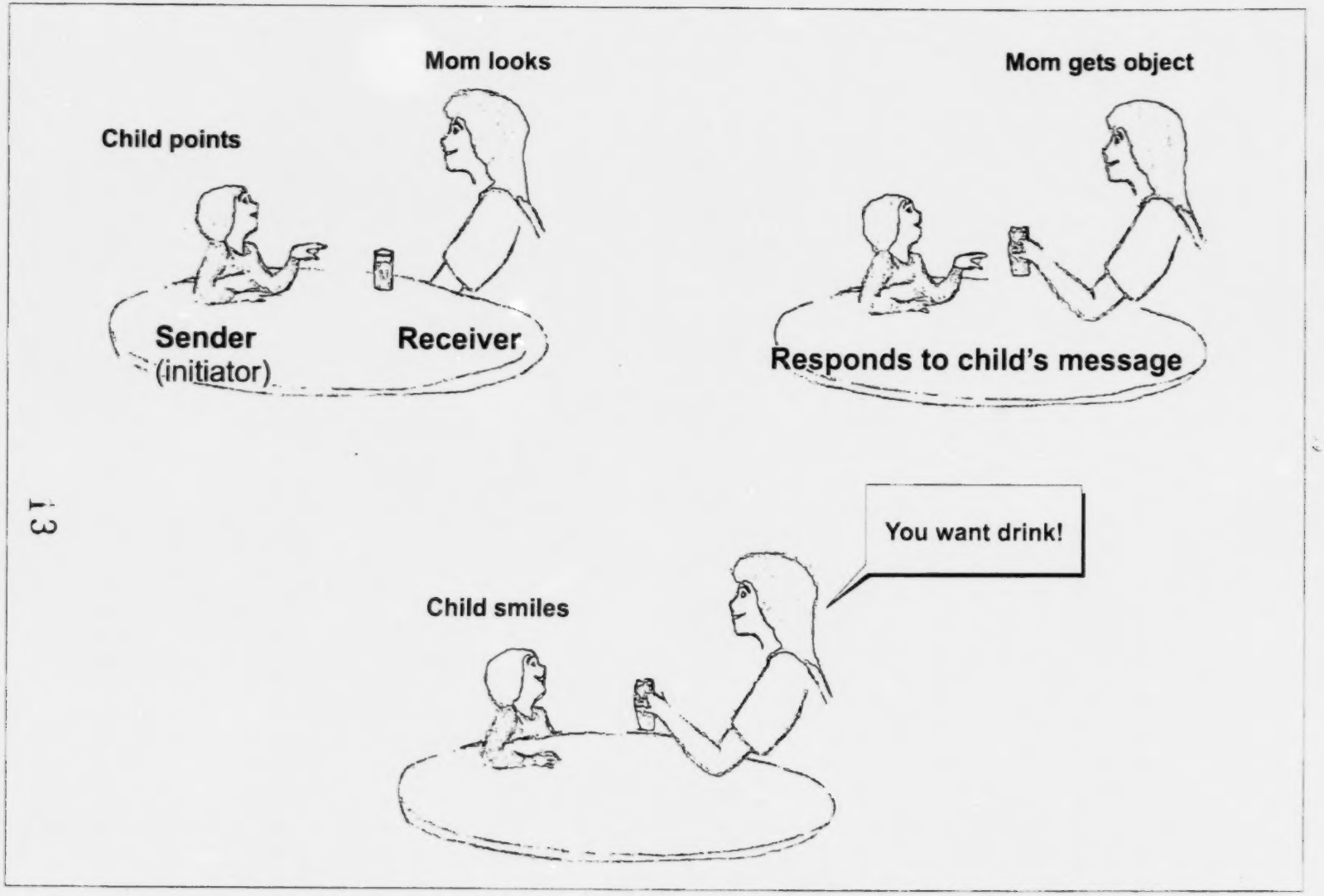
- Practice, practice, practice.
- Children will usually understand a form before they use it (unless they are imitating).
- Use of the form of communication in everyday settings will pay off.
- Use communication forms that take advantage of children's existing vision and hearing.

Figure 1.


Mom feeding her child breakfast
Message:
Bite!
Sender
Receiver
Response:
Joe smiles
Receiver
Sender
Message:
You smiled -
you want more!
Feedback
Sender

12

Figure 2.


Mom looks
Mom gets object
Child points
Sender
(initiator)
Receiver
Responds to child's message
You want drink!
Child smiles

Fact Sheet #4

Five Critical Features of Receptive and Expressive Communication

What are they?

Five critical features of receptive and expressive communication are: forms, functions/intents, content, partners, and the physical environment. Everyone's communication system is made up of these five features (McLean & Snyder-McLean, 1978).

Forms. The ways in which we receive and send communication are the "forms" of communication. All children start out using concrete simple forms of communication before they use speech, sign language, or other abstract (symbolic) forms. Young children who are deaf-blind may need adaptive forms of receptive communication so that they know what is about to happen to them. Nonsymbolic forms of communication include vocalizations, body movement, use of objects, and gestures. Symbolic forms include manual signs, speech or the use of symbols on electronic alternative devices (as an 8-plate switch). Most typical children use one primary form to communicate expressively and receptively (speech). Children who are deaf-blind may use one form for expressive communication (gestures, body movement, etc.) and a different form for receptive communication (objects, pictures, etc.).

Functions/intents. The function of communication refers to the speaker's "intent" of communication. The function explains the reason for communication. Children typically learn to express simpler (basic) functions of communication before they use the more complex functions. Some basic intents/functions of communication may include protesting, gaining attention, requesting something or someone, commenting, offering, and questioning. Some more complex functions include joking, lying, and persuading.

Content. Each form and function used communicates something. The "something" that is communicated involves the people, locations, actions, possessions, and feelings that are in the child's life. Children must experience different people, objects, and activities before they will be able to communicate about them.

Partners. Children's caregivers are their first partners for communication. All persons who interact with children who are deaf-blind must be able to understand and use the same forms that the children use. Partners must communicate frequently with the child in order to teach him or her the many forms and functions of communication. Siblings and peers are also very important communication partners.

Physical environment. The physical environment refers to the location where a communication interaction takes place. Children's major environments are their home, school, and community. Within these environments, each child has varying environments such as the family room, the kitchen, the playground, and the movie theater. It is important that children have access to many environments in order to learn what to communicate about within environments and to be able to generalize across those environments. The child's hearing and vision needs should always be taken into consideration when communicating in different environments.

Parent Tip

Facilitate physical contact by explaining to others why touch is important for a person who doesn't see and hear.

Important points to remember:

It is important to determine how the individual child understands and uses the five critical features of communication for the following reasons:

- They should all be used as considerations in assessment.
- They should be considered in IEP development.
- They should be used in program planning and evaluation.
- An assessment of a child's needs and strengths in social, cognitive, motor, and sensory development can be used to plan ways for the child to communicate more effectively.

Fact Sheet #5

Forms of Communication

What are they?

The "way" in which a person communicates is considered the "form" of communication. Forms of communication can be imagined on a continuum from very basic forms, such as crying, smiling, etc., to more advanced forms, such as speech or sign language. Forms of communication can be placed into categories that help us to understand the developmental sequence of communication. We can categorize forms of communication as pre-intentional or intentional and as pre-symbolic or symbolic.

What is non-intentional versus intentional communication?

Non-intentional communication is behaviors that are interpreted by others as being meaningful. If a baby makes a noise, it does not mean that she intended to communicate something. A child begins to learn how to communicate by realizing that his or her actions (crying, touching, smiling, etc.) may have an impact on other people. For example, a child may move her arm and unintentionally touch her mother. In response, the mother touches the baby and picks her up. Over time, the baby will learn that by touching someone she will get a response.

Intentional communication happens when a child expects that using a certain form of communication will bring about a response. For example, the child may throw a toy with the intention of getting attention.

What is pre-symbolic versus symbolic communication?

Pre-symbolic communication involves more basic forms of communication that do not rely on symbols to represent the communicative intent. Children in this stage of communication rely on movement, eye gaze, touching, pointing, vocalizing, and gesturing to convey their message, usually within an immediate context.

Symbolic communication involves a more complex system of communication that relies on symbols to convey a message. Formal language is considered symbolic because it is used as a code for the intended message according to a social culture. Symbolic forms allow communication about people, places, things, and events that are not concrete or in the present time. These include speech, sign language, printed language, and high-technology assistive devices.

Why are they important?

It is important to know the forms of communication that a child uses in order to encourage interactions to happen between the child and others. It is important to introduce and use different forms with the child so that he or she will have more opportunities to expand communication.

Parent Tip

Think of ways to explain your child's communication system to others. Suggestions include: videotapes or pictures of your child demonstrating signs he uses, homemade cards with key words and pictures, a communication dictionary.

Important points to remember:

- There is a wide range of forms from simple to complex.
- There are multiple forms available for children to use. Many children will use different forms concurrently.
- Be sure to carefully observe the forms the child is using. Some forms can be subtle and easily missed.

Fact Sheet #6

Functions of Communication

Parent Tip

Model, model, model, good communication at home and in the community.

What are they?

The functions of communication are the uses, intents or reasons for the communication act. Many different forms can be used to communicate one function. For example, the child may have a tantrum, extend an object, or sign a word to regulate another person's behavior. Functions of communication can range from the very simple to the complex (Wetherby, Reichle, & Pierce, 1998).

Early developing functions:

- Protesting or rejecting
- Calling or accessing others
- Requesting more
- Directing others or making requests

Later developing functions:

- Greeting
- Offering
- Confirming
- Answering
- Naming or labeling
- Questioning
- Commenting or replying

More complex functions:

- Joking
- Lying
- Persuading

Why are they important?

Understanding the functions of communication is important because they are the reason or motivation for the communication act to occur. Every time the child communicates, some function is being used. Listeners need to examine each situation by listening to vocal intonations and reading facial expressions and other gestures to understand the reason for the child's communication. We may be able to determine that the child is protesting, but we may not know why. We may know that the child is attempting to regulate our behavior because he or she wants something, but we may not know what it is.

Important points to remember:

- Teach the functions of requesting and protesting for many different situations before teaching a new function. Do not overwhelm the child.
- Teach new forms for an old function: If a child moves her body to make a request, teach her to touch to make a request.
- Teach new functions for old forms: If a child extends an object to request, teach her to extend an object to offer something to another.
- Require the child to communicate - don't simply give the child objects. Each child must have a reason to communicate.

NOTES

Fact Sheet #7

Individualized Communication

What is it?

A plan for teaching a communication system, like other parts of an Individual Education Plan, should be developed to take advantage of a child's strengths and to address needs across many areas of development. Strength in one area of development can "facilitate" the use of some early communication systems, but her impairment in another area could possibly "inhibit" or hinder the use of a different communication system. Therefore, decisions must be made to determine the most effective "current" communication system (Campbell, 1995).

Areas of development that need to be considered when developing a communication system include:

Cognitive skills. Can the child easily find objects based on previous experience? Does he or she know the different types of relationships of objects and how objects work? Is the child able to use a tool to achieve an end, to imitate, or to understand "same" versus "different?"

Social skills. Does the child respond differently to different persons, enjoy interacting with people, and engage in turn-taking behaviors? Does the child initiate play and communication?

Motor skills. Is the child ambulatory? Does he or she have the means to approach another person to initiate communication? Can the child use fine motor abilities to give objects, to make simple gestures, and to make more complex gestures? Does the child vocalize different sounds? Does the child have sufficient fine motor skills to be able to use many different signs?

Vision. Does the child have enough vision to use it functionally? Can the child see only at very close distances or other persons only when they are standing to the side? Does the child see only very large objects or have only light perception?

Hearing. Does the child benefit from amplification and wear hearing aids? Has the child had a cochlear implant? Does the child use existing hearing in a functional way?

Medical. Does the child have seizures or take medication that interferes with alertness? Has the child had repeated hospital visits and/or surgeries?

Why is it important?

It is important to determine a child's areas of strength and to make sure that these are used to develop his or her individual communication system. The educational team must know what strengths the child has that will facilitate learning a specific communication system. For example, one child may have enough vision to see simple gestures, but not visual signs. Another child may have no vision, but uses her hearing better than one might expect based on her hearing assessment results.

Overall decisions based upon the child's strengths and needs will indicate if:

1. the child's primary need is to develop social interactions;
2. the child might be able to learn speech;
3. the child has the cognitive and motor potential to use manual signs;
4. the child does not have the motor ability to use signs but has the cognitive potential to use a high-technology assistive device.

Parent Tip

Recognize that our kids are kids and that they will interact with different family members in different ways. They will do different things for Dad or Grandma than they will do for Mom.

Additionally, adaptive equipment, amplification, and visual aids have the potential to facilitate learning for many children. It is important that decisions about a child's communication system and progression be made on an individual basis.

Important points to remember:

- We must use a child's strengths as well as needs in planning an IEP.
- The parents need to be a part of the child's team that determines factors that facilitate or inhibit communication.
- Motor, cognitive, and social skills are just as important as vision and hearing in learning and communication.

Fact Sheet #8

General Strategies for Teaching Communication

What are they?

Strategies are the ways in which we encourage, facilitate, and directly teach communication - the actual process of teaching. Strategies can be divided into the general, which are the primary ways of teaching communication and language to all children regardless of their abilities or disabilities, and the specific, which are used to develop an approach for an individual child. Service providers should also use specific strategies that include small, sequential steps for teaching an individual child new skills or behaviors.

General strategies include the following:

1. using *social* interaction with others as a basis of teaching and learning;
2. teaching important *cognitive* skills along with communication;
3. using *routines and functional* activities for training;
4. recognizing and using *receptive* communication/language to teach *expressive* communication/language;
5. *individualizing* teaching and learning for the child/youth;
6. increasing the child's *rate of communication* by providing more opportunities for communication and being responsive;
7. *manipulating* the environment.

Parent Tip

Begin small, with a circle of good communicators, then bring in more people.

Why they are important?

Social. Communication and language have a strong social base. This means that communication is learned through interactions with others. Initially, an infant learns communication in turn-taking activities with the primary caregiver. Children soon learn to engage in social exchanges with other caregivers and siblings. These social interactions are part of caregiving routines and functional activities in the home and, possibly, day-care facilities. Children who are deaf-blind must also learn to communicate through these important social interactions. Adaptive strategies for this group may include more touch and movement interactions and more objects of reference.

Cognitive. Communication and language also have a strong cognitive base. Examples of early cognitive skills are cause-effect, means-end, tool-use, imitation, object permanency, sensory awareness, tracking, localization, and discrimination. Later cognitive skills include knowledge of colors, sizes, counting, etc. The learning of language is dependent upon a child's use of imitation, tool-use, and representation. The knowledge of objects and people, how people act on objects, and how objects work together are important information for a child who is developing language skills.

Routines and activities. Caregiving routines and functional activities are powerful opportunities for teaching communication. The routine or activity should be motivating and frequently occurring.

Receptive/expressive communication and language. Based on children's hearing, vision, and motor skills, their receptive communication may be different from their expressive system. For almost all children receptive communication and language development is more advanced than their expressive systems. Children should be exposed to the potential desirable expressive system long before they are expected to learn and use it. For example, if a child has the vision and motor ability to potentially use expressive signs at a later date, he or she should see signs repetitively every day. The child should demonstrate comprehension of the meaning of some signs before being taught to use these signs expressively.

Individualization. The child's development in social, cognitive, motor, vision, hearing, and medical areas needs to be considered. One of the most important strategies is making sure that the child is adequately assessed for visual aids, amplification/hearing devices, assistive technology, and any other accommodations (Huebner et al., 1995). It is important that recommended devices be used and cared for and that the effectiveness/noneffectiveness of the device be assessed.

Rate of communication. The more frequently that children are given opportunities to communicate at any level, the more effectively they will be able to communicate. Children whose attempts at communication are responded to consistently and frequently will have a higher rate of communication.

Manipulate the environment. Objects may be placed out of reach or behind a Plexiglas obstacle so the child has a need to communicate.

Important points to remember:

- Interact with your child frequently even if it seems that he or she wants to be left alone. Follow your child's lead. Interact in close proximity. Let your child know when you are there and when you are leaving.
- Work on imitation. Assist your child to interact with various objects. Show him or her where objects come from, where they go, how they can be placed together. Help your child understand that he or she can access the physical world in different ways through tool use.
- When you use signs, gestures, or pictures, make sure that you do not use the signs only as "labels." Make sure to use them as comments or requests so that you can see if the child understands them. Work on the child's comprehension of most words before you expect him or her to imitate them or use them.
- If your child has sufficient vision, make sure that you work together on imitation. Imitation is a critical cognitive skill for teaching many other skills, including communication and language.

Fact Sheet #9

Using Routines and Functional Activities to Enhance Communication

What are they?

Caregiving routines and functional activities such as bathing, eating, and socializing are events that happen frequently in our lives. There are many opportunities to teach and enhance communication within routines that happen everyday in the home and community. Routines can be daily caregiving activities (dressing, eating, etc.), play interactions with friends and family, or community outings.

Why are they important?

Teaching communication within routines and functional activities is important because it provides a meaningful and repetitive structure for children to learn and practice communication. Routines and activities give children and adults something to talk about and provide the basis for development of concepts such as time and sequence. They also provide a child with a sense of control over events. The steps of a simple routine or daily activity can serve to cue the child about the next step in the activity. Children can focus more attention on learning communication within the context of routines that are predictable and safe (Klein, Chen, & Haney, 2000).

Teaching communication within the context of routines enhances development and generalization. Daily routines and functional activities also provide an age-appropriate teaching environment that can promote interactions with family, siblings, and peers.

The sequence of a routine

Caregiving routines and functional activities typically have a beginning, a middle, and an end. It is important for a child to know when an activity is going to start and when it will be finished. This contributes to the development of concepts of time and sequence.

The nature and type of a routine or activity that is chosen and the specific targets on the child's IFSP/IEP will determine which forms and functions of receptive/expressive communication will be used within the routine. Opportunities for using receptive and expressive communication should be embedded into the routine or activity, and opportunities for reinforcing motor, vision, hearing, and cognitive skills should also be built into the routine.

- The *beginning* of a routine or activity should clue the child into what is going to happen next. There should be a consistent form of communication (object cue, picture, sign, spoken word or a combination) that tells the child what activity is to follow (example: an object cue, sign, word, or picture that represents "it's time to eat.") Make sure that the child is ready for the routine (glasses are on, hearing aids in, positioning is correct, etc.) so that optimal learning can take place.
- The *middle* includes all of the steps that happen as part of the routine or activity. During the activity, the sign, object, picture, or word chosen should be reinforced so that the child connects the activity to the communication attempt. The process should be simple and consistent. The child should be encouraged to participate in all aspects of the routine. Opportunities for communications should be provided.
- The *end* of the routine or activity should indicate that the activity is finished for now. The word "finish" or a finish box for object/picture cues may be used. Transitions into new routines may serve as the end of the old routine.

Parent Tip

Label items in your home environment with your child's favored communication (sign, symbols, or words) so that everyone can use the same language.

Examples of routines and activities

Routines:

- Eating/feeding
- Dressing/undressing
- Social interaction games with young children
- Toileting

Activities:

- Going to the store
- Going to the park
- Cooking
- Visiting a friend

Important points to remember:

- When developing a routine, choose a word, sign, object cue, or picture that the child will easily associate with the activity to introduce and repeat during the activity.
- Be consistent with the use of signs, pictures, and objects.
- Encourage the child to participate in all aspects of the routine and use partial participation when appropriate.
- Include peers and siblings in daily routines.
- Make the routine simple so that the child does not get frustrated.
- Place materials and communication symbols where the child can access them.
- Allow for some flexibility; it is important that children learn to deal with change.
- Choose routines that other children of the same age are doing.
- Provide opportunities for communication.

Fact Sheet #10

Addressing Challenging Behavior

What is it?

Children who do not have a formal way to let others know what they want often use behavior as a form of expressive communication. Crying, biting, slapping, and throwing objects are considered challenging behaviors. In some cases, these behaviors may be linked to the child's disability or may be medically based. However, these behaviors are often the only way the child has to let others know that he or she is bored, angry, hungry, or in pain. The child may consider these behaviors as a very effective way to communicate.

Why is it important?

It is important that challenging behavior be addressed because it can be both physically and emotionally harmful to the child and to the people around the child. Challenging behavior can also interfere with learning, social interactions, and the inclusion of a child in school and in the community.

Parent Tip

Anticipate and pay attention to potentially stressful situations.

Positive behavior should be supported in a plan that respects the dignity and self-determination of the child. This kind of plan should support the child's positive behavior, while taking away the need for the challenging behavior.

Find out why.

Most challenging behaviors serve a function for the child. The goal for addressing challenging behaviors is not just to eliminate the behavior, but to discover the function that the behavior serves. The child may gain attention, get food, or be relieved from an unpleasant task as a result of screaming, hitting, or throwing objects. The goal is to teach a more positive behavior that serves the same function.

(See Functions of Communication on Fact Sheet #6.)

Some reasons why a child may exhibit challenging behavior include:

- avoiding a task;
- gaining attention;
- requesting something;
- escaping from an activity/person/situation;
- receiving sensory stimulation;
- or a combination of these reasons.

Prepare a functional assessment

A functional assessment (O'Neill et al., 1990) is a method of collecting and analyzing information. A functional assessment can help to determine the possible reasons for the occurrence of particular behaviors. The child's educational team and the family should work together to gather the information and implement the plan.

Following are the basic steps in the functional assessment:

1. Describe the challenging behavior.
2. Identify when and where the behavior occurs most frequently.
3. Identify what happens immediately before and after the behavior occurs.
4. Determine the possible benefits the behavior has for the child.

Design a communication plan

Once you have some ideas about what the child is trying to communicate through his or her behavior, it is time to teach a more appropriate behavior that will serve the same purpose. Keep in mind that the "physical complexity of the new communication must be similar to the challenging behavior" (Carr & Durand, 1985). For example, a sign for "help" may be more difficult than hitting oneself. Hitting a switch for "help" would be about the same difficulty. Also, responsiveness to the new behavior must be more immediate and stronger than for the challenging behavior. The key to success is that all communication partners consistently respond to the new forms of communication and not to the old.

Following are basic strategies to implement a communication plan:

1. Describe the child's preferences and communication style.
2. Identify and change things in the environment that may be adversely affecting the child's behavior. Try to set up the environment for success.
3. Decide on a form of communication that the child can use to replace the behavior (picture card, pointing, sign, a switch that says "come here please").
4. Introduce this new form of communication to the child, and demonstrate that it will serve the same function as the behavior by responding immediately.
5. Work together with the team of educators and family members to keep the plan consistent across environments. Make changes when necessary.

Important points to remember:

- IDEA requires a functional assessment for students with significant behavior problems.
- A child's behavior may indicate that the task he or she is working on is finished, boring, or not functional.
- Routines throughout the day can be set up so that a nonpreferred activity can be followed by a favorite activity. Once the child begins to understand the sequence of routines, he or she is more likely to tolerate an activity that is disliked, because he or she understands that it does have an end and a preferred activity will follow.

Fact Sheet #11

Intentional Behavior

What is it?

Intentional behavior is a determination to act in a certain way in order to get an outcome. It is "cause and effect" behavior, and it is purposeful. An infant learns basic cause and effect behaviors between 3 and 4 months of age. The child's use of intentional behavior is a big developmental step. The child must learn that he or she can affect the physical and social world. A child will likely *not* learn communication if he or she doesn't perceive that movement can have a direct cause on an object. In order for intentional behavior to occur, the child must understand that a behavior can be used to act upon an object. Next, he or she must want to make something happen. Some movement or visual or auditory display must be interesting or motivating. Since a child with severe vision and hearing loss is not often motivated by sounds or visual displays, many natural objects will not serve as motivators. Hence, there is no reason for the child to try to have an effect. A child who is deaf-blind may be motivated by vibration, bright lights (if there are no seizures), or a loud noise. Think about what may be motivating for the child if he or she does not show cause-effect or intentional behavior. If he or she shows intentional behavior, that skill can be used in many different ways to teach new skills.

Parent Tip

Increase opportunities for partial participation. Partial participation is the child carrying out some part of the activity – as wiping their mouth, throwing objects away.

Why is it important?

If a child who is deaf-blind does not learn cause and effect, he or she may begin to demonstrate "learned helplessness." Learned helplessness occurs when people feel as though they have no control over anything and they stop trying to do anything for themselves.

Typical infants learn cause and effect in many different ways. For example, a baby accidentally kicks her mobile and it moves. At first she does not understand that she caused it to move and make a sound. After she accidentally kicks or hits it a number of times, she begins to figure out that she is the cause. After that she will intentionally kick or hit the mobile and will anticipate the movement. Once the infant learns that she can cause things to happen, she will begin to act on different types of toys and objects. Learning intentional behavior or cause and effect is a gradual process.

For a child who is deaf-blind, learning cause and effect or intentional behavior is not easy because the child cannot see or hear the effect that is caused. Also, a child with a severe motor disability may not be able to easily make something happen. For both of these types of children, adaptive toys and/or switches may need to be introduced into their environment. The placement of a child within his or her environment may be very important. Also, the placement of the motivator and/or the switching device is also an important consideration.

No skill should ever be taught in a vacuum. All new learning should be based on something the child already knows. For example, if the child understands cause and effect then this behavior can be expanded to teach:

- early communication (calling switch, 2-3 choice device);
- leisure activities (turning on a radio);
- environmental control (turning a light on and off);
- appropriate motor control (holding head up to hear music);

- daily life skills (turning on a microwave to cook);
- vocational skills (turning on a trash compactor for recycling).

A touch plate on a switch device can be made to vibrate in order to directly reinforce cause and effect. Later, other devices can be used to reinforce more indirect types of cause and effect. Today, many inexpensive adaptive toys, devices, and switching levers can be made or purchased.

Important points to remember:

- Do not physically assist the child to hit the switch or you may be teaching that he or she cannot cause anything to happen without an adult.
- Parents, tell service providers what motivates your child so that this is a major consideration. For example, if your child responds to loud jazz or loves air conditioning in the summer, share this information.
- Put the switching device in a place where the child can accidentally hit the switch if he or she is not motivated to hit it intentionally.

Fact Sheet #12

Receptive Contextual Cues

What are they?

All children begin to show awareness and attention to people, activities, and places based on a combination of auditory cues, visual cues, movement cues, and smell and taste cues at a very young age. We are calling these contextual or environmental "cues."

Contextual or environmental cues may not always be used intentionally by a parent or service provider with a child who is deaf-blind. However, these cues are a natural part of early caregiving routines that happen frequently throughout the day, such as feeding or changing.

At some point the child may begin to demonstrate that he or she anticipates the activity or the next step in the activity. A child who begins to show anticipation is demonstrating an early cognitive skill. An older child may respond to the school bell as a cue to change classes.

Parent Tip

Try to be aware of natural opportunities to learn and to provide information and training.

Examples of how caregivers can incorporate cues into activities:

Feeding. Give the child a bite of food. After tasting and smelling the food, the child opens her mouth to indicate that she anticipates another bite.

Changing. Move the child to the changing table, and he begins the movement of "bottom-up."

Bathing. Run the water in the bathtub. The child hears and smiles in anticipation of getting a bath.

Going for a ride. Place the child in his car seat and start the car's engine. The child shows excitement about going somewhere.

Hearing the lawn mower. Dad starts up the lawn mower, and an older child hears it. He then goes outside to work with Dad.

Why are they important?

The contextual or environmental cues given by caregivers are important for several reasons. First, they allow the child to begin to use residual vision or hearing within the context of the activities and routines. Second, as the cues begin to have meaning, they give the child opportunities to demonstrate skills such as awareness, attention, and anticipation. These cues serve as indicators that something "good" or "not good" is about to happen. Third, caregivers can begin to read the child's anticipatory behaviors as "she likes this, she doesn't like that." The child's reaction begins to be perceived as intentional communication. Persons interacting with the child who is deaf-blind should deliver contextual cues very intentionally and wait for a response from the child. If the child does not have time to process the information, then he or she will not have time to show anticipation. Once a child learns to anticipate activities, he or she will have a basis to begin to learn other skills.

Important points to remember:

- Children need to have a reason to use whatever hearing and vision they have.
- The child's early responses to contextual cues provided by caregivers may be the first indicators that the child may have more functional vision and hearing than was indicated on a standard assessment.

NOTES

Fact Sheet #13

Receptive Touch Cues

What are they?

Touch (or tactual) cues are firm touches on the child's body that begin to have meaning. Parents usually provide some natural touch cues and don't even realize it. Touch cues for "up" or "I am going to change you" are examples of these. If some children have limited tactual sensitivity, movement cues may replace the touch cues. The parent would move the child's arms up to mean "I am picking you up." It is important that an occupational therapist provide input into if and how "touch/tactual" cues should be used.

Touch cues are especially important if the child is deaf or cannot functionally use his or her hearing. One of the most important early touch cues to teach is the child's name. Touch cues would be taught prior to tactual gestures or signing.

The child will, hopefully, begin to have a passive awareness of the cues as they are paired with specific activities each time they are used. Then he or she will begin to attend to the touch cues by indicating a more active awareness. Later the child will show anticipation to the touch cues. For example, the child will eventually demonstrate understanding of the cue "up" by lifting her arms or standing up.

Parent Tip

After modeling communication with one's child, suggest "you try" and step back and give others the opportunity. It's not about communicating perfectly but about making opportunities available.

Some examples of touch cues for younger children and older children might include:

Younger Children	Older Children
Up	Stand Up
Down	Out of chair
Change	Give me
Bath	No
More	Wait
Give me	Stop
No	Yes
Wait	Good
Finished	Look for

Why are they important?

Touch cues are important for a number of reasons. First, touch cues (as well as other cues) let the child know that someone is there to interact with him or her. Thus, they can decrease startling responses. Second, the touch cues provide information about what is about to happen or where the child is going. Third, the touch cues let the child know that an opportunity is available for him or her to use expressive communication. More specifically, touch cues, as well as other receptive cues, may be used to indicate the following functions:

1. Getting the child's attention;
2. Letting the child know who is going to communicate with him or her;
3. Letting the child know what action is about to happen;

4. Letting the child know where he or she is going;
5. Letting the child know that he or she is "finished" with an activity;
6. Asking a question.

Initially only a few touch cues should be presented. When the child shows anticipation and/or comprehension of a few cues, more cues can be added. The initial cues should be at different places on the child's body so that the child is not confused by two cues being made on her arm. The touch cues (and other receptive cues) must be used frequently and directly paired with an activity or routine. Additionally, touch cues may be paired with object cues or, later, with gesture cues if this assists the child to learn.

Important points to remember:

- *Consistency*. Everyone should use the same touch cue except for their own name.
- *Repetition*. The same touch cues should be used frequently each day.
- *Wait time*. Make sure that you observe the child and wait for a response of some type.
- *Routines*. The touch cues should be used within critical routines and activities.

Fact Sheet #14

Receptive Object Cues

What are they?

Object cues are real objects, associated objects, or miniature objects. These objects are intentionally given to a child to hold in order to provide information or "input" to the child. These objects are paired with a person, a routine or activities so they stand for or "label" the activity (Van Dijk, 1986). A spoon may mean that the child will eat soon. Objects that are given to a child to use or play with are not object cues. An object cue should clearly communicate the "intention" of the communication partner to "announce, label, provide information, or give a directive." In other words they announce the purpose for the communication interaction from the partner.

Communication partners may use an object or personal item to identify themselves, such as a ring, earrings, beard, watch, etc. They should select an object that is with them at all times to "represent" their name. They should verbally announce themselves as they have the child touch their individualized object cue.

Object cues may be used for both younger and older children. Samples include:

For younger children:

- Spoon for eat;
- "Wet Ones" for changing;
- Washcloth for bath;
- Keys for ride in car;
- Bubble wand for bubbles;
- Put object in an empty container for "finished;"
- Piece of carpet for "Down on floor;"
- Piece of chain for "swing."

For older children:

- Name cue;
- Cereal box for breakfast;
- Lunch ticket for lunch in school;
- Spoon for eating;
- Backpack for school or home;
- Key for ride in car;
- Box for "finished;"
- Timecard for work;
- Wrist holder for "Going shopping;"
- Sweatband or whistle for "Going to gym;"
- A mouse or grip for library or computer room;
- Objects to represent a sequence of some or all daily activities as a timetable or calendar system.

Why are they important?

Many of us do not have great memories. Children with disabilities may not remember a sign ten minutes later. The object cues are stationary and serve as a reminder of where the child is going or what is expected. For a child who has very little or no functional vision and hearing, the object cues may serve as the initial concrete directive. The cues may first be used, as a receptive form of communication (a) "You are going to gym now," (b) "Go to gym." Later, they may be used as an expressive form (c) "Where do you want to go?"

Parent Tip

Invite kids from the neighborhood who are near your child's age into your home! Make your home welcome and fun for others. Teach neighborhood children the best way to interact with your child.

Miniature objects should not be used for children whose vision is minimal. Concrete objects that are a critical part of an activity may be used for children who have severe brain damage.

Once a child shows that he or she understands two and more object cues, one may begin to use the cues to show the sequence of activities throughout the day in a time management system.

Important points to remember:

- Families should determine what object cues are the most important for their family activities.
- Initially try to use the same or similar object cues across school and home.
- Don't use your actual car keys as cues, as children have lost these. Make up another set.

Fact Sheet #15

Receptive Gestures

What are they?

Receptive gestures are movements that express a request, a command, or give information. The child receives them as "input." Gestures may range from the simple to the more complex. A child will usually receive a gesture in the visual mode. However, a child with little or no vision can learn to understand a gesture that is presented in the tactual mode. There are different types of simple gestures such as pointing, that refer to people, objects, and places in general. There are also gestures that refer to a very specific action, such as "bye." Facial gestures may also be used to intentionally communicate a message. Parents and service providers may use gestures with speech for children who have residual hearing.

Parent Tip

At family meals, give others an opportunity to communicate with your child who is deaf-blind. Leave the room, and talk to your family about what happens when you do.

Simple gestures. Simple gestures are ways or forms in which young children may understand communication before they understand words. Children continue to use gestures as they learn their first words. In fact, the use of gestures may actually help the child learn their first signs or words. Adults continue to use many gestures with their language. Simple gestures can be understood by most cultures. Therefore, simple gestures are not symbols; they are nonsymbolic forms of communication. Simple gestures may be used in either receptive or expressive forms and may take on many different functions or intents. For example, gestures can be used to direct, to give information, to praise, to protest/reject, and to get someone's attention.

Examples of simple gestures include:

- extend hand to express "give me"
- offering extended objects
- mine
- finished
- up
- want
- no
- bye (bye-bye)
- yes
- come here
- sit
- eat
- drink

Complex gestures. If a child can understand more complex gestures, he or she may also be able to understand some iconic signs. These are more abstract than simple gestures. They become more symbolic in form as they become more abstract and their meaning becomes harder to judge. Some complex gestures may be specific to a culture and may actually be symbolic.

Examples of complex gestures include:

- push lawn mower
- don't know
- hammer
- turn the screw
- cooking
- look for it
- stop
- water the lawn
- gym
- bus

Why are they important?

The use of visual or tactual gestures as a part of the child's progressive communication system is important because gestures can be understood by anyone and can be used to refer to many different people, places, objects, and actions. For typical infants who are learning language, gestures play an important part in their receptive and expressive language development.

Just as with other receptive communication modes, the child should be given an opportunity to respond, thus, showing that he or she understands the meaning of "give me," "bye," "show me." A child begins to learn the meaning of gestures as part of a routine or activity. One of the first gestures that a typical infant understands is "up." Initially, gestures should refer to an object or an activity that is motivating to the child.

A child can learn to pair gestures for more complex meaning. For example, pointing and shaking the head no may mean, "I don't want to go there!" A child will usually pair a word with a gesture as he or she learns how different words go together in a phrase.

Important points to remember:

- A child should have experience understanding receptive gestures prior to signs.
- Everyone should use gestures to help children to understand.
- Parents should help determine the important gestures to be used in the home and family activities.

Fact Sheet #16

Use of Touch as Expressive Communication

Parent Tip

Give others an opportunity to volunteer to do things with your child.

What is it?

Touching other people or objects is a form of expressive communication. It is an example of a nonsymbolic form of communication. Usually any child can touch in some way. Reaching out to touch people shows that the child is orienting toward people. Thus, touching may be a more intentional form of communication than vocalizing or using body movements. There are a number of behaviors that can be included under this form:

- touching or tapping people;
- touching an object while looking at or orienting toward a person;
- manipulating an object, such as banging a cup for "drink;"
- manipulating a person's hand;
- touching a person and an object.

The use of touch to communicate expressively is still one of the earlier phases of communication development. A child learns that he or she must act more directly on people.

Why is it important?

In order to show intentional communication, the child must orient to the listener in some way. This orientation may include eye gaze, turning towards, and touching. For a child who has no vision, the form of touch is very important, and it is also important as a form of human bonding, thus strengthening the concept that communication occurs between two people.

For children who move their bodies or vocalize to communicate, teachers and parents can "up-the-ante" and show them that they need to touch the listener. Hence, the child learns that he or she must do something more to get what he or she wants. Children who do not have the motor capacity to touch with their hands, may turn their heads slightly to touch the desired object or the adult's hand, which is held beside their face.

Important points to remember:

- Initially, the adult can place his or her hand close to the child's so that the child can "accidentally" touch the adult. If possible, try not to take the child's hand to physically assist them to touch, as this is somewhat intrusive.
- A child can touch to communicate a number of different functions or intents. For example, a child may push away to indicate rejection or protest. A child may tap Dad to indicate, "Hey, look here." Touching the spoon may mean that the child wants another bite.
- Touching a person and then an object, or touching an object and then a person, is more difficult than touching just a person or just an object.
- The use of touch as an expressive form of communication will be more important for those children who have limited motor and/or cognitive ability because they may need to use touch rather than sign language.

NOTES

Fact Sheet #17

Expressive Gestures

What are they?

Expressive gestures are the intentional use of motions of the limbs or body as a means to convey a request or emphasizing a verbal statement or argument. Different cultures may use different gestures. Expressive gestures are nonsymbolic communication forms that are important for many cultures. They communicate shared meaning between a speaker and a listener. Gestures are higher forms of communication than vocalizations, simple body movements, or touching.

There are a number of different types of gestures. Some may be generic and used to express a large number of messages. Generic gestures include extending objects, shaking the head "no," pointing, nodding the head "yes." Other gestures may be representational of a specific object or an action of an object, such as "pouring." Both types of gestures may range from simple to more complex. Following are examples of gestures that children may be taught prior to using manual signs or speech:

Generic	**Representational**
↘ extending object	↘ eat
↘ pointing	↘ drink
↘ waving "bye" or "hi"	↘ open
↘ shaking head no	↘ vacuum
↘ nodding head yes	↘ type
↘ come	↘ paint
↘ mine	↘ take the Band-Aid off
↘ extending hand	↘ kiss me

Parent Tip

Tell people what your child's gestures (body language) mean so they can look for and understand your child's responses.

Why are they important?

Gestures are an important part of communication development for all children. All children will use some gestures before they learn to talk or to sign. Young children use two very important gestures before they use their first words. These gestures are (a) extending objects to request and (b) pointing to direct others or to share joint attention. People continue to use gestures even when talking or using signs. We cannot go to the store and purchase an item without using gestures. We extend our money or credit card to the clerk and we hold out our hand for the change and then for our purchase. Thus, people use gestural forms of communication to express various functions of communication.

If a child who is deaf-blind is being considered as a candidate for manual signing as a symbolic form of communication, then gestures should be taught. Many iconic signs are actually gestures since they represent an object or the function of an object. Gestures should not be by-passed as the child learns speech or manual signs. The child will have a need to continue to use new gestures even as he or she learns speech or sign language. Of course, the child will have to have a certain level of motor ability in order to use gestures as forms of expressive communication.

Important points to remember:

- Teach simple, generic gestures before representational gestures are taught. As the child learns a symbolic form of communication, the child's use of gestures should increase, not decrease.
- A symbolic communication system should not replace gestures. Rather, gestures should add information to the symbolic message.
- Gestures can be used when a child doesn't have a specific word or sign to refer to a person, place, action, or object even if he or she is using a symbolic communication system.

Fact Sheet #18

Pictures

What are they?

Pictures can be used as a primary form of receptive and expressive communication for children who do not use sign language or speech. They can also be paired with sign and speech to increase understanding by children who have some residual vision. If a child's corrected vision is 20/200, pictures or line drawings may not be an option. Children who are blind can also use pictures made of raised material, but these can be difficult to identify and are more abstract.

There are many different kinds of pictures that are used for communication. The form that is best for the child will depend on several factors including visual acuity, ability to discriminate, and sensitivity to glare and color. Following are some examples:

Parent Tip

Create a sign or communication dictionary of the words and concepts your child uses.

Photographs are often the easiest for children to understand because they closely replicate the object or activity. Research shows that cutting away the foreground of the picture from the background makes it easier for a child to discriminate the object or activity in the photo. Photos should have color contrast, and there should be only one person or object in the photo. Those with a matte finish are preferable.

Colored drawings are similar to illustrations in a child's book. Real-life colors should be used in contrast with background lines drawn in black. They should be kept simple with only one object or person in the drawing.

Line drawings are simple pictures or symbols that are drawn with thick, black lines on a white or light colored background. They can be color coded to represent nouns, verbs, and other parts of speech. Line drawings are more abstract than photos or colored drawings; however, some children with vision impairments have more success with these drawings because the detail is clearer and there is less clutter.

Why are they important?

Picture communication is more abstract or symbolic than object communication. Pictures are a more portable form of communication than objects because they can be used within a communication board or book and be carried with the child.

Moving from objects to pictures

Some children who have vision may start out using objects for communication because they are more concrete and easier to understand than pictures. Eventually, a child may be ready to move to a picture communication system, which is more abstract. As with other forms of communication, we should initially introduce pictures that refer to objects, persons, actions, or events that represent things in the here and now. It is also advisable to start with pictures that represent things that are motivating to the child and with which the child interacts frequently throughout the day.

As a child moves from object to picture communication, it is best to pair the two forms and slowly fade the objects. Initially, present the two forms together. As the child becomes familiar with the picture you can begin to show the object less frequently. Eventually, the child will learn to rely on the picture instead of the object. Make sure before you remove the object cue that the child can match the picture to the object and can thoroughly understand what the picture represents. We do not want to teach that the child will get something in return if he or she hands us a picture of just anything. We need to make sure that we are teaching that the picture *represents* something specific.

Important points to remember:

- Make certain that the child uses objects to communicate prior to using pictures.
- Make certain that the child understands that the pictures represent a specific object.
- Make sure you consider the vision and cognitive abilities of the child before using a picture or a line drawing.

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Fact Sheet #19

Language

What is it?

Language is a symbolic form of communication. A language can either be spoken or signed and is governed by a set of rules that are culturally determined. It includes vocabulary, semantics, and syntax. It can be abstract and expresses thoughts and feelings and represents the concepts of past, present, and future. Language is only part of communication.

Children begin to communicate in infancy, even though they have not yet developed a formalized language. The child may communicate somewhat effectively through means such as crying, laughing, pointing, etc. Language begins to develop through repeated exposure to a formalized system in a social context (Rowland & Schweigert, 1989). Children who are deaf-blind have a more difficult time making this transition because their access to language is limited by vision and hearing disabilities.

Why is it important?

Language is our link to people and bonds us to our culture. It allows us (beyond gestures) to communicate about past and future events.

Important points to remember:

- Communication can occur without formalized language.
- Communication is the way we interact with our environment.
- Language development requires the cognitive base to learn representation and depends on repeated exposure.
- Language may share some of the nonsymbolic forms that exist within the realm of communication, but language itself is a symbolic mode of communication.

Parent Tip

Remember, conversations need a beginning, a middle, and an end.

NOTES

Fact Sheet #20

Speech

What is it?

Speech is the way we communicate with each other orally (by mouth)/aurally (by ear). It requires the output of voice and the reception of hearing. Many people who are deaf-blind use speech as their primary mode of communication. They may use assistive listening devices or digitized speech output from a computer to aid them in this mode of communication. Speech can be used alone or in conjunction with other methods of communication (Jensema, 1979).

Speech/lipreading. This approach requires vision because the receiver must watch the lip movements of the speaker. Speech therapy and/or auditory training are often necessary in order to become skilled in this mode of communication. This approach is often used by individuals who are hard-of-hearing and whose vision loss is stable. For individuals with a progressive loss, such as macular degeneration or Usher Syndrome, this may not be the best mode of communication since they may not be able to visually access spoken language in the future.

Tadoma Method. The Tadoma Method is an approach that requires the placement of the receiver's (deaf-blind person's) hand on the mouth, jaw, and voice box of the speaker. This is the only method that will allow totally deaf-blind individuals to access speech. By touching the face of the speaker the person who is deaf-blind has access to the vocal vibrations and breathing patterns that are associated with speech. This method, when used independently, is typically not a successful mode of communication for children who are deaf-blind. However, when used in combination with other methods, Tadoma may enhance the individual's understanding and use of spoken language.

Parent Tip

Being in close proximity to the child is usually required for effective communication.

Total Communication. Total Communication is a multimodal approach. This method emphasizes the use of both hearing and vision when communicating. Sign language, spoken language, lipreading, and amplification of residual hearing are all used and are all given equal importance. This approach puts much emphasis on the use of speech and auditory training. Because speech and lipreading are used simultaneously with sign language, the sign system has an English base. The use of hearing aids, auditory trainers, FM (frequency modulation) systems or FM Loop systems, and speech/language intervention are all encouraged when embracing the TC model.

Cued Speech. This communication method uses specific handshapes near the face to supplement speechreading. The system is phonemically based, meaning that a combination of handshapes and mouth movements are used to represent the way letters sound rather than the letters themselves. There are 8 handshapes representing groups of consonants that are placed in four positions around the face. The four positions represent groups of vowel sounds. The combination of information supplied by the hands and the lips provides a visible representation of spoken language (Williams-Scott & Kipila, 1996, p. 118).

Why is it important?

Speech is the mode of communication used by the general public. Having the ability to access spoken language will encourage interactions with people in the community. Deaf-blind individuals may use one mode of communication when socializing with their family and friends (i.e., American Sign Language) but may use Total Communication when in the community.

Important points to remember:

- Some deaf-blind individuals may use speech and be able to hear spoken language with amplification (hearing aid or FM System).
- Some deaf-blind people (typically people who are hard of hearing and have stable vision) will use lipreading as a mode of communication.
- Spoken communication can be accessed in different ways such as through closed captioning.

Fact Sheet #21

Braille

What is it?

Braille is a tactual way of reading and writing for people who are blind. It is based on a code system of raised dots that can be felt with the fingertips. The basic unit of the Braille code is called a cell, which is two dots wide and three dots long. Each cell arrangement represents a letter of the alphabet, a number, or a contraction.

Why is it important?

Braille can be a useful form of receptive and expressive communication. It can be used to receive information in simple to complex ways. For example, a Braille card with a Braille and print message can be used to communicate to make a purchase in a store, or Braille can be used for simple labeling for children with good tactual skills, or Braille can be used to receive and send information via the Internet.

Parent Tip

Request that restaurants adopt Braille/picture menus and provide community agencies with a list of restaurants that offer them.

As a receptive and expressive communication system, Braille can open doors for children and young adults to communicate freely and easily with others.

Braille also allows a child or young adult to gain access to information through "print material."

For the child with deafblindness, who has a strong language base and uses finger spelling as a primary means of communication, Braille can be a very effective secondary communication mode.

Ways to read and write in Braille include:

- slate and stylus;
- tape labeler;
- Braillewriter;
- computerized Braille production;
- refreshable Braille (see Fact Sheet #27).

Important points to remember:

- It is important to strategically plan the introduction of Braille.
- Pre-Braille and Braille-readiness activities are necessary when learning Braille. A child will need to have good tactual skills, which can be developed using small objects or tactual patterns, an emphasis on a "light" touch, and the opportunity to explore the environment and materials tactually.
- Teachers or paraprofessionals who have had training in Braille and its educational strategies typically teach Braille to students.
- When considering Braille, the instructor will assess the child's language level, conversational skills, tactual skills, and orientation skills. Braille is recommended for children who are totally blind or who have a progressive visual condition.
- Literacy for all children is a national agenda.

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Fact Sheet #22

Sign Language

What is it?

Sign language is a form of manual communication. There are varieties of established sign language systems used in the United States. These systems are either based on English, American Sign Language, or a combination of both languages. Sign language is unique in the fact that it can be received and expressed both visually and tactually.

There are different cultural influences within each sign language system. For example, in the United States, American Sign Language is embraced within the deaf community and is the leading component that formulates deaf culture. Sign language systems are unique to each country and culture. There is not one universal sign language.

Parent Tip

Advocate for sign language classes to be offered in the community for adults and children.

American Sign Language (ASL). ASL is a visual-gestural language that has a syntax and semantic structure separate from the English language. It is a language mostly used by people within the deaf community and by individuals who are moderately to profoundly deaf. The shape, movement, and orientation of the hand(s) determine the meaning of the sign. Facial expression, space, directionality, and body movement are significant components of ASL. ASL is a conceptual language that is expressed visually or tactually. Speech is not used in conjunction with ASL because spoken language follows English grammatical structure. ASL cannot be documented in written format; however, an example of English words in an ASL sentence is as follows.

English: "We will cancel football practice tomorrow if it rains."

ASL: "If tomorrow rains, football practice cancel."

Signed Exact English (SEE). SEE is a sign language system that is based on the English language. In order to facilitate the development of competent English reading and writing skills, many of the signs are initialized with specific letters. This strategy enables distinguishing between signs that are the same but are represented by different English words (i.e., the words "group," "organization," and "team" all use the same sign but are initialized with a, *g*, *o*, or *t*, respectively). Distinctly different from ASL, in SEE the signs do not have discrete meaning as they do in ASL, but rather the root of the English word determines the sign that is used (i.e., the word "butterfly" would be represented by the signs for "butter" and "fly").

Pidgin Sign English (PSE). This is a system that borrows features from both SEE and ASL. The base of the system follows the English language; however, differently from SEE, the sign used to represent the word is true to its meaning, not its root. For example, the signs for "ran" in each sentence would be different from each other in SEE but the same in ASL.

"I just ran out of glue."

"The squirrel ran up the tree."

Total Communication (TC). This is a multimodal approach. Sign language, spoken language, lipreading, and amplification of residual hearing are all used. This approach puts much emphasis on the use of speech and auditory training. Because speech and lipreading are used simultaneously with sign language, the sign system is of an English base. The use of hearing aids, auditory trainers, FM (frequency modulation) systems or FM Loop systems, and speech therapy are all encouraged when embracing the TC model.

Finger spelling. This is the one-handed, manual version of the English alphabet. A unique hand shape represents each letter of the alphabet. This system, in the United States, is based on the English language. A technique called the Rochester Method enables an entire conversation, both receptive and expressive, to be conducted completely in finger spelling. No signs are used to represent words or concepts.

Other languages also use finger spelling independently or in conjunction with their sign language system. However, shape, direction, and hand use vary significantly from one language to another.

Why is it important?

It is important to be aware of the differences within each sign language or manual sign system because they vary significantly. Before engaging your child with a manual system, analyze the reasons for selecting this particular system. For example, is the manual language going to be the child's only mode of communication or is it intended to supplement another system already in place (e.g. speech, raised print)? Having the answers to these questions will assist you in selecting the best mode of communication for your child.

Sign language is often an appropriate mode of communication for deaf-blind individuals because it can be expressed and received tactually (by touch). For example, if your child is deaf and legally blind, she would receive signs into the palm of her hand(s). This is called Tactual Sign Language. This mode of communication uses the same signs and follows the same grammatical rules as the original visual system (ASL or SEE). Minor adaptations can be made to visual signs so they are easily accessed by the deaf-blind person.

Important points to remember:

- Manual communication systems vary significantly (American Sign Language vs. Signed Exact English).
- Each sign language system is unique to the country in which it is used.
- Sign language can be expressed and received tactually.
- Tactual Sign Language is not a different sign system than those that are used visually.

Fact Sheet #23

Printed Material

What is it?

Much of our communication with the world, on a grander scale, is through printed or written materials such as books, magazines, and newspapers. Writing, typically, is a secondary mode of communication for most individuals. It is a form of communication established after a more interactive, interpersonal mode is adopted.

Individuals who are deaf-blind sometimes rely on their vision and use print as a means of communication with the general public or with individuals who are not familiar with their particular mode of communication. Two essential components required in order to use print as a means of communication are useful residual vision and fine motor coordination. Some individuals who are deaf-blind are not able to produce legible writing, nor can they access printed materials because of their level of vision loss and hand-eye coordination abilities. Types of print adaptations include:

Parent Tip

Encourage and reinforce the use of closed captioning for TV and theater movies.

Large print. For someone relying on vision, written or printed information can generally be adapted via computer program or copy machine to suit his or her needs. The font can be enlarged, the color can be changed, or the background shade of the page can be altered to provide better contrast. When communicating face-to-face, it is wise for a communication partner to use a bold, black marker and write in an enlarged font. Bold-lined paper is also available that will help guide the deaf-blind individual.

Raised print. Even if individuals who are deaf-blind rely mainly on their vision for communication, some of them may incorporate tactual methods to assist them in their lives. Raised print is a form of printed material, based on a language such as English, that consists of letters embossed in plastic. This adhesive plastic can then be placed on clothing tags (to identify color) or communication cards (to communicate with the general public). This format allows the deaf-blind individual to either visually read or tactually feel the shape of the letters. It is important for an individual to have an understanding of the alphabet and the English language for this method to be successful.

Pairing print with objects and pictures. Printed words can be paired with an object or picture to facilitate the development of a more symbolic language. A child may initially use a concrete form of communication such as objects or pictures. When the child seems ready to expand his or her language, one can begin to introduce simple printed words into daily interactions by pairing the printed word with the object or picture. Depending on the child's residual vision, this can be done either visually (with large print) or tactually (with raised print).

Print-on-palm. Print-on-palm is a method that is based on the English language and tactually represents how printed letters appear visually. The communication partner uses an index finger to spell out each letter (in block format) in the palm of the deaf-blind person's hand. The communicator should pause briefly between each letter. All letters are in uppercase except for the letter *i*. This method is appropriate for people who have a fairly advanced level of understanding of the English language.

Closed captioning or CART (Computer-aided Real Time Captioning). Printed words can also be accessed through either open or closed captioning. Captioning is the typed version of spoken language, text, or dialogue. Typically, captioning scrolls across the bottom of some type of television or projected screen. Individuals using this method must be able to access moving print. Adaptations to the font size and color are sometimes available to better suit the needs of the individual.

Why is it important?

Much of our interaction with the world is through printed material. This is obvious through the shift toward the availability of information via the Internet. It is important for people who are deaf-blind to have ways to access this information. Also, individuals who are deaf-blind must use a variety of communication methods in order interact with people who do not know their specific mode of communication, such as sign language. In order to effectively communicate with people in the community, it is important to be fluent in the use of multiple forms.

Important points to remember:

- Pairing simple words with objects or pictures can move the child from a concrete to a more symbolic mode of communication.
- It is helpful to have a fairly advanced level of understanding of formal language, such as English, to understand printed material.
- A student must be able to follow scrolling words at a fairly rapid pace in order to access captioning.

Fact Sheet #24

Assistive Technology

What is it?

The Individuals with Disabilities Education Act of 1997 defines assistive technology as: "any item, piece of equipment or product system . . . modified or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities" [20 U.S.C. Chapter 33, Section 1401 (25)]. Assistive technology is not a language system, rather it includes devices that are utilized to support a mode of communication that is already in place.

Assistive technology includes devices that facilitate communication, support mobility, or enable environmental control. There are both low- and high-technology devices available that support receptive and expressive communication through auditory, visual, or tactual means. Following are some of these:

Parent Tip

Give responsibilities to your child that match his or her abilities and continually raise expectations.

Auditory. Auditory aids or assistive listening devices (ALDs) can intensify the volume of auditory information such as speech, music, and environmental sounds.

Visual. Devices that support vision can enhance or enlarge images and printed materials such as handwritten notes and text.

Tactual. Tactual devices are those that provide information through touch (e.g., Braille, vibration, etc.).

Type of device. When deciding which devices are appropriate, keep in mind that more devices are not always better. Devices that are at the same cognitive/language level of the child will work best. Also, for children with fine motor skill issues, devices that are easy to work with and are easily manipulated will be most successful. Devices with small buttons or on/off switches may be difficult.

Portability. Because children are in a variety of environments throughout the day, it is imperative to have portable devices. If a device is too large, weighs too much, or needs to be attached to a larger device, it will most likely not be used. If an item can be carried from room to room, the child and his or her communication partners will be more likely to use it on a regular basis.

Why is it important?

Assistive technology makes it possible to access environmental information. Having access to these items facilitates and supports communication, and with this support, integration into one's community can occur and isolation be alleviated.

Important points to remember:

- Use the device that an individual is cognitively and linguistically ready to use.
- Provide training for the deaf-blind person on how to use and care for the device.
- Do not purchase a high-tech device if only a low-tech device is needed.

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Fact Sheet #25

Assistive Auditory Technology

What is it?

Auditory aids or assistive listening devices (ALDs) intensify the volume of auditory information such as speech, music, and other environmental sounds. There are a variety of devices that support hearing. Some of these can reduce the amount of extraneous environmental noise and allow the child to access a speaker directly. Examples of auditory devices include:

Hearing aid. This device enhances the volume of speech and environment sounds. Hearing aids do not clarify speech but only amplify sounds. There are different types of hearing aids (e.g., behind-the-ear, in-the-ear, in-the-canal).

FM system. This device uses FM waves, a microphone, and a hearing aid. A microphone worn by the speaker transmits a signal to the hearing aid of the receiver (person who is deaf-blind). This device reduces background sounds.

Cochlear implant. This computerized device is surgically implanted into the cochlea and translates environmental sounds into electronic information.

Text-to-speech software. These are programs that convert information on the computer screen into synthesized speech.

Braille-n-Speak. This is a small, portable, note-taking device that synthesizes voice output.

Things to consider before selecting a device:

Hearing loss. Depending on the level of hearing loss, different devices will provide better support. A child with mild to moderate hearing loss may easily access speech through hearing aids alone, while a child with moderate to profound loss may benefit from the use of hearing aids and an FM System.

Some devices are more costly and have long-term implications. For example, cochlear implants require surgical implantation and extended amounts of speech training. Research is increasing in this area.

Environment. Different devices may work better in different environments. An FM system may work best in the classroom where there is prolonged one-to-one communication but may not be as effective in a large group setting where simultaneous interactions take place.

Type of device. Clearly understand the purpose and overall impact of a device before purchasing it. Be sure that the device meets the need of your child. For example, you may not want to purchase a Braille-n-Speak if your child does not have strong keyboarding skills.

Why is it important?

Auditory aids and ALDs allow many individuals to access speech and/or sounds in their environment. This enables the child who is deaf-blind to have better interactions with peers and enables the child to ambulate throughout his or her environment, thus promoting independence.

Parent Tip

Provide information or an in-service program on your child's communication for church groups, and bible schools.

Important points to remember:

- Consider your child's needs.
- Investigate all equipment options to see what will best suit your child.
- Have devices checked on an annual or biannual basis to be sure that they are still effective for your child.
- Be aware of the specific purpose and effect of all devices and of necessary procedures before you purchase them.

Fact Sheet #26

Assistive Visual Technology

What is it?

Visual devices can be used to enhance or enlarge text and images and to reduce glare. There are handheld, easily portable devices as well as devices that are deskbound. Some devices are for individual use only while others can be used to support interactive communication. Examples of visual devices include:

Acetate color overlays. These are small pieces of colored plastic used over printed materials to reduce glare.

Glass magnifiers. These are handheld items that rely on light refractive properties and increase the size of an image. These are effective for low magnification purposes.

CCTV (closed circuit television). This is a desktop device that uses a small video camera to magnify material and project its image onto a video screen. Portable CCTVs are available at a higher cost.

Computer screen magnification. Software programs can change the size of a font, invert colors, magnify sections of the screen, etc.

Dry erase boards. These are portable devices that have a hard, reusable surface and an erasable marker. This device is effective for interactions with the public at a somewhat slowed pace.

CART (Computer-aided real time captioning). This is a program that uses a computer and large screen television to visually and simultaneously record spoken language. Captionists need to be trained to use the program.

Things to consider before selecting a device:

Vision loss. It is imperative to know what type of vision loss your child has in order to adequately support his or her needs. Some devices will be appropriate for your child, and others will not be. For example, if your child has blurred vision, following simultaneous captioning that moves across the screen at a rapid pace will, most likely, not be the best choice for him or her. Also, if your child is able to read print, it is important to know the font type and size that works best. IDEA mandates that all educational materials be made available to your child in his or her preferred media.

Type of device. Learn the difference between handheld (e.g., magnifying glass) and desktop (e.g., CCTV) devices. Some low-technology items may work just as well for your child and can be purchased at a lower cost over the counter. Also, items that are portable and work well in the community will most likely be used by your child and his or her communication partners.

If an individual has a progressive vision loss, as time goes on a specific device may decrease in effectiveness. Have your child's vision evaluated on an annual or biannual basis.

Why is it important?

Most of what we learn about our world is available in print (educational materials, newspapers, magazines, etc.). An array of devices is available to help your child access these materials. They will help your child to lead a more self-determined life.

Parent Tip

Start friendships at an early age. Teach friends how to use your child's communication devices.

Important points to remember:

- Have your child's vision checked regularly in order to determine any changes.
- Understand the difference between acuity (central, distance) and peripheral (outer, surrounding) vision.
- Know the difference between handheld and desktop devices.
- Some devices are used specifically for interactive communications.
- Make sure that glasses and magnifiers are clean and all devices are in working order.

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Fact Sheet #27

Assistive Tactual Technology

What is it?

Tactual devices provide information through touch, using raised print, Braille, or vibration. There are devices that are either manual or electronic, low- or high-technology. Examples of tactual devices include:

Raised print. Certain paints or plastic can be used to produce raised print. Labels can be embossed.

Braille. This is a text system that uses a pattern of raised bumps to indicate letters, numbers, and punctuation.

Refreshable Braille. This is a device that is attached to a computer. It causes pins to rise and fall upon the command of the user. The user must be able to read Braille.

Optical Character Recognition (OCR) scanners. These are devices that convert printed material into a computerized format that can then be changed into Braille or digitized speech.

Braille-Lite. This is a portable note-taking device that uses a standard Braille keyboard and can be linked to a computer to upload or download information.

Tellatouch. This portable device is used to communicate one letter at a time with the public.

Vibro-tactual alerting devices. These devices inform the deaf-blind person of environmental sounds (e.g., telephone, doorbell, fire alarm) through vibrations. A receiver is worn on the body of the deaf-blind person.

Braille TTY Telephones. These consist of a TDD (telecommunications device for the deaf) and a refreshable Braille display. They make it possible for people who are deaf-blind to use the telephone. Some types may also be used for face-to-face interaction.

Parent Tip

Heighten public awareness of the uses of assistive technology. Talk to people and teach one person at a time.

Why is it important?

Information that is available visually or auditorally can be conveyed in a tactual mode. Devices are available that can convey information quickly and accurately.

Depending upon a variety of factors, some individuals are more tactually sensitive than others. Some factors are age of onset of vision loss, cause of vision loss, and additional medical issues. For example, if an individual loses his or her vision because of diabetic retinopathy he or she may not be able to receive information tactually because of the loss of sensitivity in the fingertips.

Some devices that provide information tactually are intended to work on a one-to-one basis, but others have the capability of conveying information almost simultaneously in a group setting. Carefully assess your child's need and his or her understanding of the use of each device before implementing them.

Important points to remember:

- Learn the difference between tactual alerting and communication devices.
- Be sure of your child's fluency in Braille before introducing devices that convey information in this manner.

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Fact Sheet #28:

Culture and Communication

What are they?

Culture is a set of learned behaviors that a group of people abides by. A variety of components comprise a culture and affect the actions of the people within the group. Various constituents need to be present in order to comprise a culture, such as identity, language, norms, values, and traditions.

Identity. A variety of cultures coexist within the deaf-blind community: hearing, deaf, and deaf-blind. Each individual may identify himself differently. For example, a person who is profoundly deaf may identify himself as Deaf (with a capital "D") because he grew up in the deaf community and uses ASL as his primary language. If an individual uses spoken language and relies on auditory input for communication, he may identify himself as hearing.

Language. It is argued whether deaf-blindness is a culture or not because there is heterogeneity within the community that leads to the use of unique communication systems and different languages (English and ASL). For this reason deaf-blindness is often referred to as an emerging culture.

Slight differences or variations exist within languages. For example, a simple wrinkle of a nose by someone who is deaf or deaf-blind may mean "oh really" to another deaf or deaf-blind person and can indicate continued interest in the conversation. If this method were used in the hearing community, the intent of the message would be unclear and would be considered a rude response to a communication partner.

Norms. Knowing the appropriate protocol and expectations of your communication partner is essential in order to make communication a success. For example, the steps we take in order to initiate conversation with someone who is hearing, deaf, or deaf-blind are all different. If someone is hearing you can vocally call out his or her name. For a deaf individual you can either tap on the table where he or she is sitting or wave your hand so that he or she can see you. With a deaf-blind person, most often, you need to approach the person and indicate your presence through touch.

Values. People who are deaf-blind value touch and physical contact. In the deaf community, vision is highly valued and cherished. For hearing people, maintaining one's physical space between hearing communicators is appreciated. Knowing these differences and how to apply them to your conversations within the deaf-blind community will positively affect the flow of interaction.

Traditions. Subtleties that are embedded within each language affect communication. For example, sense of humor is received and expressed differently by people of different cultures. The English language is comprised of countless idioms and expressions that are closely tied to humor and are specific to the life experiences of hearing people. Within the deaf community storytelling is a large part of the culture. Stories are often based on shared experiences of deaf people such as going to the audiologist or speech therapist, which members in the deaf community directly relate to and find humorous. Deaf-blind individuals' humor is often times related to life experiences as well, such as the communication blunders made by members of different communities.

Why are they important?

When individuals from different backgrounds and life experiences coexist within a community, it is necessary for the members to understand the key components of each culture in order to have clear communication.

Parent Tip

Don't be an island. Others in the community may actually interact better with our kids than we expect them to.

Important points to remember:

- People within the deaf-blind community have varying life experiences.
- People who are deaf-blind may use varied and multiple modes of communication and this heterogeneity influences the culture of this group.

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